A FEEDBACK PROCESS TO MODEL CP UTILIZATION
MULTI-PROCESSOR PERFORMANCE MODELS

ABSTRACT OF THE DISCLOSURE:

Feedback control algorithms for controlling a given simulation
model which relates to a computer-program-based method and
respective system for providing a feedback control for a given
set of control quantities of a simulation model, comprising a
plurality of iterated simulation runs each of which consumes a
considerable amount of time. Each single run is performed with a
setting of starting values for certain entry control quantities
suited to control certain target quantities. The respective next
setting of entry quantities is based on the value of the target
quantities measured in the preceding simulation run. In order to
provide for a fast convergence of the target quantities to a
final, predetermined value, the following formula is applied:

$$x'_{n+1} = \frac{v_n}{1+p_n(1-v_n)} \qquad (6a)$$

where

$$v_n = (n+1)u - nu_n \qquad (6b)$$

μ is the final value of the target control quantity aimed at, μ_n
its value achieved up to iteration n of the simulation run and p_n
is a suitable system parameter. χ is a certain entry quantity
suited to make μ_n converge against μ, and χ'_{n+1} is the value of χ
to be chosen for the next iteration.